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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/979,533	03/08/2002	Alfred Jann	112843-035	5939

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EXAMINER	
MARX, IRENE	

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/979,533	JANN ET AL.	
	Examiner	Art Unit	
	Irene Marx	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *1-5 and 7-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6 and 23-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 9/22/05 is acknowledged. Claims 6 and 23-24 are being considered on the merits.

Claims 1-5 and 7-21 are withdrawn from consideration as directed to a non-elected invention.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Applicant argues that the title recites a method of increasing insulin sensitivity. However, the title of record appears directed to a "Method For Increasing Propionate In the Gastrointestinal-Tract".

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

The attempt to incorporate subject matter into this application by reference to Roberfroid *et al.* is ineffective because mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph. In re de Seversky, 474 F.2d 671, 177 USPQ 144 (CCPA 1973). In addition to other requirements for an application, the referencing application should include an identification of the referenced patent, application, or publication.

Applicant did not respond to this objection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 23-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 23-24 are vague, indefinite and confusing in the recitation of "increasing insulin sensitivity" in a mammal by "selectively increasing production of propionate" in a gastro-intestinal tract of the mammal. The intended meaning of "selectively" in this context is unclear. Is this the only effect that dextran has on the gastrointestinal tract of mammals? In addition the amount of "selective increase" is not set forth with any particularity. Thus, the specific amount of "selective increase in propionate" or its nexus to an undefined "increase in insulin sensitivity" cannot be cannot be determined by one of ordinary skill in the art.

As noted previously the definition and nature of "insulin sensitivity" is not clearly set forth in the instant context. No clear definition of this term is found in the instant specification. Is this a method of treatment of a medical condition or merely an optional improvement in insulin "sensitivity"? Moreover, the extent of "increase" of "insulin sensitivity" is not set forth with any particularity. Is it 0.0001%, 0.1%, 1%, 10%, 50%?. No clear correlation is found in the as filed specification between the material claimed and the disclosure. See also the new matter rejection *infra.*

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant argues that the invention should now be clarified by the recitation that an increase in insulin sensitivity can be obtained by selectively increasing production of propionate through the oral administration of dextran in specified amounts as claimed. However, the Examiner disagrees because the correlation between a "selective" increase of propionate" and "increase in insulin sensitivity" is not set forth with any particularity in the instant written disclosure. As a matter of fact, the amount of "increase" intended is not clearly delineated and the specification suggests effects on insulin by enteral administration only.

Therefore the rejection is deemed proper and it is adhered to.

The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 and 23-24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Insertion of the limitation of increasing insulin sensitivity in a mammal "by selectively increasing production of propionate in a gastro-intestinal tract of the mammal by orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 wherein dextran is administered in an amount of from about 10 g per day to about 15g per day" does not have support in the as-filed specification. The insertion of this limitation is a new concept because it neither has literal support in the as-filed specification by way of generic disclosure, nor are there specific examples of the newly limited genus which would show possession of the concept of the use of "dextran having a molecular weight above about 500,000 wherein dextran is administered in an amount of from about 10 g per day to about 15g per day" to "selectively increase propionate in the gastrointestinal tract" and to thereby "increase insulin sensitivity". The disclosure of Example 3 of administration of dextran T2000 (which has the specific molecular weight of 2000 kD) at an acute dose of 15g per day or a chronic dose of 10g per day to increase propionic acid in the intestinal tract is not sufficient basis or support for the new genus of "increasing insulin sensitivity in a mammal by selectively increasing production of propionate in a gastro-intestinal tract of the mammal by orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 wherein dextran is administered in an amount of from about 10 g per day to about 15g per day". There is no clear indication that the "chronic dose" is administered just once a day. On the contrary, there is a clear suggestion that this dose is administered more than once a day, in light of the term "chronic". There is no clear definition in the specification

It is noted that dextran "having a molecular weight above about 500,000" is not the material administered and there is no clear indication in this example that propionic acid "is

selectively increased" or that "insulin sensitivity" is increased in any way. In the specification at page 2 it is clearly stated that "insulin sensitivity" can be increased by enterally administering a nutritional composition which contains dextran. No indication is made of orally administering a dextran having a molecular weight of 500,000 or more in the recited amount. This is a matter of written description, not a question of what one of skill in the art would or would not have known. The material within the four corners of the as-filed specification must lead to the generic concept. If it does not, the material is new matter.

Thus, the insertion of "increasing insulin sensitivity in a mammal by selectively increasing production of propionate in a gastro-intestinal tract of the mammal by orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 wherein dextran is administered in an amount of from about 10 g per day to about 15g per day" is considered to be the insertion of new matter for the above reasons.

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant argues that the oral administration of dextran in specified amounts as claimed is clearly supported in the specification, for example, in example 3, wherein volunteers were given an acute dose of 15g of dextran T 2000 and a chronic dose of 10g of dextran T 2000 per day, citing Specification, page 8, line 1 1-16. The results indicated that an increase in the level of propionate acid in the gastro-intestinal tract followed consumption of dextran in these amounts. Specification, page 9, lines 5-6.

However, this does not provide basis or support for "orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 and that is administered in an amount from about 10 g per day to about 15 g per day". Neither the amount of 10 g to 15 g per day nor the molecular weight of "above 500,000" find basis or support in the as filed specification. The fact that T2000 is above 500,000 does not provide basis for the amount as claim designated.

Moreover, the nexus between the recitation in the specification and applicant's bald assertion that one skilled in the art would readily understand that an increase in insulin sensitivity would also result where insulin sensitivity is generally recognized and accepted as a measure for

the effectiveness of removing glucose from the blood stream. The fact that propionate can enhance glycolysis and can inhibit gluconeogenesis cannot be equated with an increase in insulin sensitivity as claimed.

Therefore the rejection is deemed proper and it is adhered to.

Claims 6 and 23-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims are drawn to a process of "increasing insulin sensitivity in a mammal" by a process comprising "orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 and that is administered in an amount from about 10g per day to about 15g per day" and which also results in a selective increase in gastrointestinal propionate.

In contrast, the written disclosure does not disclose the amount of dextran suitable to be administered orally as claimed for the recited purpose of increasing insulin sensitivity. Thus the results alleged are not shown to be achieved.

The only dextran preparations provided are in oral form wherein 3-5 volunteers are provided "Dextran T2000" either as one "acute does of 15 g dextran" or a "chronic dose of 10 g per day". The relationship between this administration and an "increase in insulin sensitivity" cannot be readily assessed from the instant record. The type of preparation administered is not set forth with any particularity. The only result monitored was the effect of propionic acid in feces upon oral administration of Dextran T2000. The written disclosure suggests that propionic acid concentration in feces increases upon oral administration of dextran. However, there is nothing on the record regarding a nexus or correlation between oral administration of the T2000 dextran in the amounts now claimed and any increase in insulin sensitivity. It is noteworthy that oral consumption of dextran T2000 induced no relevant changes of blood formula, investigated blood proteins or blood plasma enzymes. How is "increase in insulin sensitivity" monitored and on whom? The effects of "orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 and that is administered in an amount from

about 2 g per day to about 15 g per day" are not addressed in the present written disclosure. There is no clear indication on the record regarding the administration protocol, form or dosages required to achieve the touted effect of "increasing insulin sensitivity" for oral administration of dextran having a molecular weight above about 500,000 in an amount from about 2g per day to about 15g per day" as claimed. Further, there is no indication regarding the length of the treatment period required to achieve any result. In addition, the effects of consumption with other oral preparations, such as food cannot be readily assessed. There is insufficient guidance in the written disclosure regarding the making of suitable oral nutritional compositions as claimed for the desired purpose.

Therefore, the claims fail to comply with the enablement requirement, since the claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant argues that the specification discloses that propionate is produced by fermentation of dextran and that propionate is a physiological modulator of fat and glucose metabolism. From these two statements, applicant concludes that "the oral administration of dextran provides a convenient and simple way of selectively increasing the production of propionate in the gastro-intestinal tract and beneficially modulates physiologic parameters. Accordingly, administration of dextran provides a method for increasing insulin sensitivity". However, these conclusionary remarks fail to demonstrate how to make and use the claimed invention based on the as filed specification. What is lacking in the as filed specification is specific guidelines to achieve a significant increase in insulin sensitivity by the material claimed. Example 3 is directed to the "chronic" administration of 10g per day of dextran T2000 for 10 days. The results of the administration of one dose of 15 g of dextran T2000 is not provided. Moreover, all the results show is an increase in the output of propionic acid. There is no information regarding any increase in insulin sensitivity due to the enteral administration of this type of dextran.

No information is found regarding the protocol necessary to achieve an increase in propionate or how the effect on insulin sensitivity, i.e., whether it is increased and how much, by the enteral administration of dextran in an amount of about 2 g to about 15 g per day as claimed.

Therefore the rejection is deemed proper and it is adhered to.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alsop *et al.* (EP 0153013) and Mitsuhashi *et al.*(EP 382355)

The claims are directed to a process of increasing insulin sensitivity by orally administering a nutritional composition comprising dextran having a molecular weight above about 500,000 and that is administered in an amount from about 10 g per day to about 15 g per day.

Alsop *et al.* discloses a drink composition comprising 2.5 g of dextran having an average molecular weight of 500,000 in 100 ml for oral administration. See, e.g., Example 1 bridging paragraph between pages 7 and 8.). Given that the molecular weight of dextran is indicated as an average indicates that at least some of the dextran has a molecular weight that is higher than about 500,000. Given the volume of 100 ml of this drink composition, one of ordinary skill in the art would reasonably have expected the administration of multiple doses per day, such as four or five doses of this composition in a particular day.

The reference differs from the claims invention in the additional administration of oligosaccharides and lipids. However, Mitsuhashi *et al.* disclose a process of administering a composition comprising dextran to mammals for the purpose of promoting the growth of intestinal *Bifidobacterium*. A result of this administration is an increase in insulin sensitivity in

the mammal at least to some extent (See, e.g., Examples 9 and 11 and page 5, lines 37-43), since it has as an effect the prevention of diabetes. In addition the reference discloses that the addition of certain oligosaccharides such as fructooligosaccharides and xylooligosaccharides is beneficial to enhance the promotion of *Bifidobacterium* (See, e.g., Abstract), which further enhances the desired effect of increasing insulin sensitivity . The reference also discloses that that the nutritional compositions containing dextran also comprise lipid sources "rich" in unsaturated fatty acids, such as unsaturated fatty acids *per se,* which are naturally "poor" in saturated fatty acids (See, e.g., page 3, lines 14-16).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of Alsop *et al.* of administering dextran in doses of 2.5 g/100 ml, by administering such compositions four or five times a day to mammals and adding certain oligosaccharides such as fructooligosaccharides and xylooligosaccharides and/or unsaturated fatty acids to the compositions as taught by Mitsuhashi *et al.* for the expected benefits of providing compositions which are more complete nutritionally and which have the effect of increasing the *Bifidobacterium* flora and of preventing diabetes by increasing insulin sensitivity at least to some extent.

Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Upon careful review of the data in Alsop, it is noted that the 2.5 g of dextran are provided in 100 ml, therefore, one of ordinary skill in the art would reasonably have expected administration of this composition several times a day, including 4 times or more, to amount to a total of two cups or so. Therefore, the teachings of the reference reasonably suggest the claimed invention. As to the alleged effects to be provided, it is noted that the method requires a one step method of administration, which is met by the reference. The results obtained by the administration of a substantially similar composition to the same subject in similar amounts would reasonably the expected to have substantially similar effects, as discussed in the previous office action. In addition, the criticality of 10 g or 15 g per day has not been clearly

demonstrated on this record with respect to the invention as claimed. See also the new matter rejection.

Regarding applicant's contentions about differences with the results of Mitsuhashi *et al.*, it is noted that the instant method of administration of similar compositions is devoid of specific amounts of the added compositions to be administered, therefore, the results touted are not commensurate in scope with the claims.

The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. In re Dill, 202 USPQ 805 (CCPA, 1979), In re Lindner 173 USPQ 356 (CCPA 1972), In re Hyson, 172 USPQ 399 (CCPA 1972), In re Boesch, 205 USPQ 215, (CCPA 1980), In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983), In re Clemens, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

Therefore the rejection is deemed proper as written and it is adhered to.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irene Marx
Primary Examiner
Art Unit 1651